

=> file reg; d stat que 18; d stat que 110  
 REGISTRY ENTERED AT 15:04:07 ON 21 JUL 2006  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2006 American Chemical Society (ACS)

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 20 JUL 2006 HIGHEST RN 894992-91-7  
 DICTIONARY FILE UPDATES: 20 JUL 2006 HIGHEST RN 894992-91-7

New CAS Information Use Policies, enter HELP USAGETERMS for details.

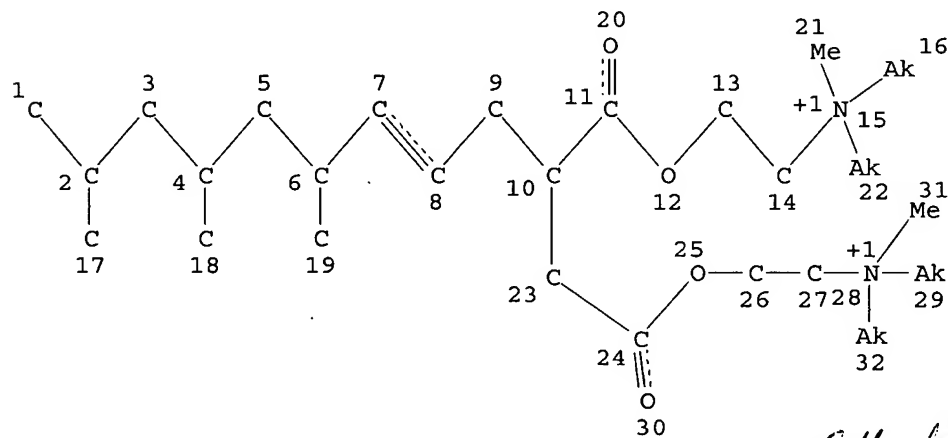
TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

L1 STR



*full file search*

NODE ATTRIBUTES:

CHARGE IS E+1 AT 15  
 CHARGE IS E+1 AT 28  
 CONNECT IS E1 RC AT 16  
 CONNECT IS E1 RC AT 22  
 CONNECT IS E1 RC AT 29  
 CONNECT IS E1 RC AT 32  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED  
 ECOUNT IS E4 C AT 16  
 ECOUNT IS E4 C AT 22  
 ECOUNT IS E4 C AT 29  
 ECOUNT IS E4 C AT 32

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 32

STEREO ATTRIBUTES: NONE

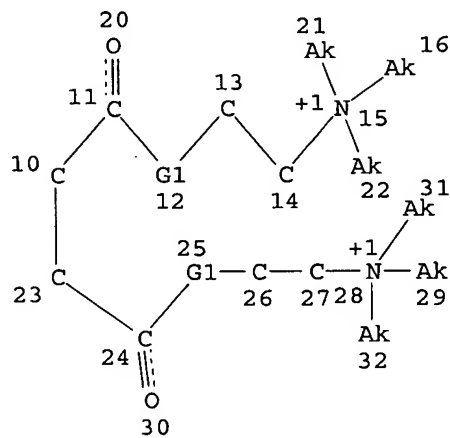
L8 0 SEA FILE=REGISTRY SSS FUL L1

100.0% PROCESSED 133 ITERATIONS  
SEARCH TIME: 00.00.01

0 ANSWERS

L5

STR



*2d full file search*

VAR G1=NH/O

NODE ATTRIBUTES:

CHARGE IS E+1 AT 15  
CHARGE IS E+1 AT 28  
CONNECT IS E1 RC AT 16  
CONNECT IS E1 RC AT 21  
CONNECT IS E1 RC AT 22  
CONNECT IS E1 RC AT 29  
CONNECT IS E1 RC AT 31  
CONNECT IS E1 RC AT 32  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 20

STEREO ATTRIBUTES: NONE

L10 162 SEA FILE=REGISTRY SSS FUL L5

100.0% PROCESSED 31380 ITERATIONS  
SEARCH TIME: 00.00.02

162 ANSWERS

=> file caplus; d que nos l11; d que nos l16  
FILE 'CAPLUS' ENTERED AT 15:04:27 ON 21 JUL 2006  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 21 Jul 2006 VOL 145 ISS 5  
 FILE LAST UPDATED: 20 Jul 2006 (20060720/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/infopolicy.html>

L5 STR  
 L10 162 SEA FILE=REGISTRY SSS FUL L5  
 L11 2013 SEA FILE=CAPLUS ABB=ON PLU=ON L10

L5 STR  
 L10 162 SEA FILE=REGISTRY SSS FUL L5  
 L11 2013 SEA FILE=CAPLUS ABB=ON PLU=ON L10  
 L12 432 SEA FILE=CAPLUS ABB=ON PLU=ON GAS (3A) HYDRATE (3A) INHIBIT?

L13 2 SEA FILE=CAPLUS ABB=ON PLU=ON L11 AND L12  
 L14 1045 SEA FILE=CAPLUS ABB=ON PLU=ON HYDRATE (3A) INHIBIT?  
 L15 2 SEA FILE=CAPLUS ABB=ON PLU=ON L11 AND L14  
 L16 2 SEA FILE=CAPLUS ABB=ON PLU=ON L13 OR L15

=> d ibib ed abs hitstr l16 1-2

L16 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2004:700323 CAPLUS  
 DOCUMENT NUMBER: 141:209796  
 TITLE: Betaines and quaternary salts as corrosion inhibitors and natural gas hydrate inhibitors with improved water solubility and biodegradability  
 INVENTOR(S): Dahlmann, Uwe; Feustel, Michael  
 PATENT ASSIGNEE(S): Clariant GmbH, Germany  
 SOURCE: Eur. Pat. Appl., 16 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----

EP 1450004 A1 20040825 EP 2004-2387 20040204  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK  
 DE 10307729 B3 20040826 DE 2003-10307729 20030224  
 NO 2004000582 A 20040825 NO 2004-582 20040209  
 US 2004163306 A1 20040826 US 2004-783188 20040220  
 DE 2003-10307729 A 20030224

PRIORITY APPLN. INFO.:

OTHER SOURCE(S): MARPAT 141:209796

ED Entered STN: 27 Aug 2004

AB Natural gas hydrate inhibitors are compds.

of general formula  $R_1R_2R_3N^+-B-X-C(:O)-D-C(:O)-Y-R_4$ , in which: (1)  $R_1, R_2 =$  C1-22-alkyl, C2-22-alkenyl, C6-30-aryl, or C7-30-alkylaryl, (2)  $R_3 =$  C1-22-alkyl, C2-22-alkenyl, C6-30-aryl, or C7-30-alkylaryl, -CHR5-COO-, or -O-, (3)  $R_4 =$  M, H, or C1-100-heteroatom-containing substituent (M is a cation), (4) B is optionally substituted C1-10-alkyl, (5) D = D = substituted or unsubstituted C1-600-heteroatom group, (6) X, Y = independently -O- or -NR6-, and (7)  $R_5, R_6 =$  H, C1-22-alkyl, C2-22-alkenyl, C6-30-aryl, or C7-30-alkylaryl. The compds. are typically prepared by conversion of a corresponding alkenylsuccinic anhydride with a N,N-dialkylaminoalkanol (especially (N,N-dialkylamino)ethanolamine), to give

the

mono- or bisderiv., which is then quaternized. The compds. also have use as corrosion inhibitors.

IT 742096-67-9P

RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(corrosion inhibitor and natural gas hydrate inhibitor; betaine inner salts as corrosion inhibitors and natural gas hydrate inhibitors with improved water solubility and biodegradability)

RN 742096-67-9 CAPLUS

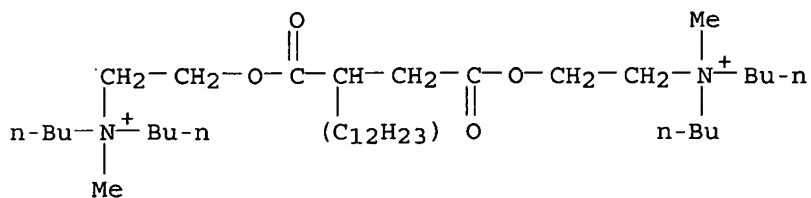
CN 1-Butanaminium, N,N'-[[1,4-dioxo-2-(tetrapropenyl)-1,4-butanediyl]bis(oxy-2,1-ethanediyl)]bis[N-butyl-N-methyl-, sulfate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 742096-66-8

CMF C38 H76 N2 O4

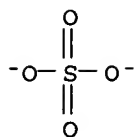
CCI IDS



CM 2

CRN 14808-79-8

CMF O4 S



L16 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:700322 CAPLUS

DOCUMENT NUMBER: 141:209795

TITLE: Betaine inner salts as corrosion inhibitors  
and natural gas hydrate  
inhibitors with improved water solubility and  
biodegradability

INVENTOR(S): Dahlmann, Uwe; Feustel, Michael

PATENT ASSIGNEE(S): Clariant GmbH, Germany

SOURCE: Eur. Pat. Appl., 14 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1450003	A1	20040825	EP 2004-2383	20040204
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10307728	A1	20040909	DE 2003-10307728	20030224
DE 10307728	B4	20050922		
NO 2004000583	A	20040825	NO 2004-583	20040209
US 2005101495	A1	20050512	US 2004-783153	20040220
PRIORITY APPLN. INFO.:			DE 2003-10307728	A 20030224

OTHER SOURCE(S): MARPAT 141:209795

ED Entered STN: 27 Aug 2004

AB Corrosion inhibitors and natural gas hydrate inhibitors are compds. of general formula  $R_1R_2R_3N^+-B-X-C(:O)-D-C(:O)-Y-R_4$ , in which: (1)  $R_1, R_2$  = C1-22-alkyl, C2-22-alkenyl, C6-30-aryl, or C7030-alkylaryl, (2)  $R_3$  = C1-22-alkyl, C2-22-alkenyl, C6-30-aryl, or C7-30-alkylaryl, -CHR5-COO-, or -O-, (3)  $R_4$  = M, H, or C1-100-heteroatom-containing substituent (M is a cation), (4) B is optionally substituted C1-10-alkyl, (5) D = -CH2CH2 or C1-600-substituted ethylene group, (6) X, Y = -O- or -NR6-, and (7)  $R_5, R_6$  = H, C1-22-alkyl, C2-22-alkenyl, C6-30-aryl, or C7-300-alkylaryl. The compds. are typically prepared by conversion of a corresponding alkenylsuccinic anhydride with a N,N-dialkylaminoalkanol (especially (N,N-dialkylamino)ethanolamine), to give the mono- or bisderiv., which is then quaternized.

IT 742096-67-9P 742096-69-1P

RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(synthesis of, as corrosion inhibitors and natural gas hydrate inhibitors; betaine inner salts as corrosion inhibitors and natural gas hydrate inhibitors with improved water solubility and biodegradability)

RN 742096-67-9 CAPLUS

CN 1-Butanaminium, N,N'-[[1,4-dioxo-2-(tetrapropenyl)-1,4-butanediyl]bis(oxy-

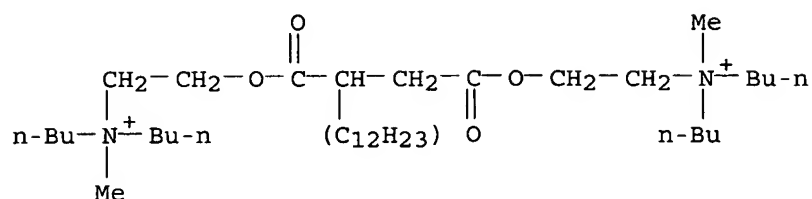
2,1-ethanediyl)]bis[N-butyl-N-methyl-, sulfate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 742096-66-8

CMF C38 H76 N2 O4

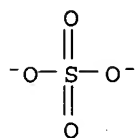
CCI IDS



CM 2

CRN 14808-79-8

CMF O4 S



RN 742096-69-1 CAPLUS

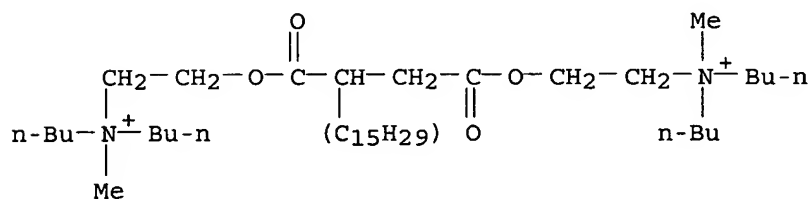
CN 1-Butanaminium, N,N'-[[1,4-dioxo-2-(pentapropenyl)-1,4-butanediyl]bis(oxy-2,1-ethanediyl)]bis[N-butyl-N-methyl-, sulfate (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 742096-68-0

CMF C41 H82 N2 O4

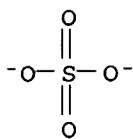
CCI IDS



CM 2

CRN 14808-79-8

CMF O4 S



=> file caold; d que nos 117; d que nos 119  
 FILE 'CAOLD' ENTERED AT 15:05:28 ON 21 JUL 2006  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
 COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1907-1966  
 FILE LAST UPDATED: 01 May 1997 (19970501/UP)

This file contains CAS Registry Numbers for easy and accurate substance identification. Title keywords, authors, patent assignees, and patent information, e.g., patent numbers, are now searchable from 1907-1966. TIFF images of CA abstracts printed between 1907-1966 are available in the PAGE display formats.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file supports REGISTRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

```
L5          STR
L10         162 SEA FILE=REGISTRY SSS FUL L5
L17         191 SEA FILE=CAOLD ABB=ON  PLU=ON  L10
```

```
L5          STR
L10         162 SEA FILE=REGISTRY SSS FUL L5
L17         191 SEA FILE=CAOLD ABB=ON  PLU=ON  L10
L18         10 SEA FILE=CAOLD ABB=ON  PLU=ON  HYDRATE (3A) INHIBIT?
L19         0 SEA FILE=CAOLD ABB=ON  PLU=ON  L17 AND L18
```

=> d his full

(FILE 'HOME' ENTERED AT 14:22:11 ON 21 JUL 2006)

FILE 'ZREGISTRY' ENTERED AT 14:22:23 ON 21 JUL 2006

L1 STR  
L2 0 SEA SSS SAM L1  
L3 STR L1  
L4 5 SEA SSS SAM L3  
D SCAN  
L5 STR L3  
L6 5 SEA SSS SAM L5  
DIS  
D SCAN L6

FILE 'REGISTRY' ENTERED AT 14:58:15 ON 21 JUL 2006

L7 0 SEA SSS SAM L1  
L8 0 SEA SSS FUL L1  
SAVE L8 VAL188FU1/A TEMP  
D L5  
L9 5 SEA SSS SAM L5  
L10 162 SEA SSS FUL L5  
SAVE L10 VAL188FU2/A TEMP

FILE 'CAPLUS' ENTERED AT 15:00:15 ON 21 JUL 2006

L11 2013 SEA ABB=ON PLU=ON L10  
L12 432 SEA ABB=ON PLU=ON GAS (3A) HYDRATE (3A) INHIBIT?  
L13 2 SEA ABB=ON PLU=ON L11 AND L12  
L14 1045 SEA ABB=ON PLU=ON HYDRATE (3A) INHIBIT?  
L15 2 SEA ABB=ON PLU=ON L11 AND L14  
L16 2 SEA ABB=ON PLU=ON L13 OR L15

FILE 'CAOLD' ENTERED AT 15:01:59 ON 21 JUL 2006

L17 191 SEA ABB=ON PLU=ON L10  
L18 10 SEA ABB=ON PLU=ON HYDRATE (3A) INHIBIT?  
L19 0 SEA ABB=ON PLU=ON L17 AND L18

FILE 'REGISTRY' ENTERED AT 15:04:07 ON 21 JUL 2006

D STAT QUE L8  
D STAT QUE L10

FILE 'CAPLUS' ENTERED AT 15:04:27 ON 21 JUL 2006

D QUE NOS L11  
D QUE NOS L16  
D IBIB ED ABS HITSTR L16 1-2

FILE 'CAOLD' ENTERED AT 15:05:28 ON 21 JUL 2006

D QUE NOS L17  
D QUE NOS L19

FILE HOME

FILE ZREGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 20 JUL 2006 HIGHEST RN 894992-91-7  
DICTIONARY FILE UPDATES: 20 JUL 2006 HIGHEST RN 894992-91-7



New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

#### FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 20 JUL 2006 HIGHEST RN 894992-91-7  
DICTIONARY FILE UPDATES: 20 JUL 2006 HIGHEST RN 894992-91-7

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and  
predicted properties as well as tags indicating availability of  
experimental property data in the original document. For information  
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

#### FILE CAPLUS

Copyright of the articles to which records in this database refer is  
held by the publishers listed in the PUBLISHER (PB) field (available  
for records published or updated in Chemical Abstracts after December  
26, 1996); unless otherwise indicated in the original publications.  
The CA Lexicon is the copyrighted intellectual property of the  
American Chemical Society and is provided to assist you in searching  
databases on STN. Any dissemination, distribution, copying, or storing  
of this information, without the prior written consent of CAS, is  
strictly prohibited.

FILE COVERS 1907 - 21 Jul 2006 VOL 145 ISS 5  
FILE LAST UPDATED: 20 Jul 2006 (20060720/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.  
They are available for your review at:

<http://www.cas.org/infopolicy.html>

#### FILE CAOLD

FILE COVERS 1907-1966  
FILE LAST UPDATED: 01 May 1997 (19970501/UP)

This file contains CAS Registry Numbers for easy and accurate substance identification. Title keywords, authors, patent assignees, and patent information, e.g., patent numbers, are now searchable from 1907-1966. TIFF images of CA abstracts printed between 1907-1966 are available in the PAGE display formats.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file supports REGISTRY for direct browsing and searching of all substance data from the REGISTRY file. Enter HELP FIRST for more information.

=>